



Air Conditioning Retrofit Procedures

Subaru has developed A/C retrofit procedures for the following vehicles:

1987-94 Loyale

1993 Impreza

1990-93 Legacy Zexel systems

1990-93 Legacy Calsonic systems (including Turbo)

1992 SVX

Additional part number and content information for Subaru A/C retrofit kits can be found on page 30 of the Spring 2000 *End Wrench*.

Retrofit Instructions For 1987-94 Loyale

Notes:

1. Retrofit kit is P/N SOA864A100.
2. Always lubricate all o-rings with PAG oil before installation.
3. Always tighten fittings to proper torque specifications.
4. Observe all safety recommendations.
5. System to be serviced by qualified personnel only.

1. Repair any problems or leaks before beginning retrofit procedure.
2. If the R-12 vehicle air conditioning system is operational run it at idle with the A/C blower on high speed for five minutes to optimize the amount of oil in the compressor.
3. Recover all R-12 refrigerant from the vehicle's A/C system utilizing a UL approved R-12 recovery device.
4. Remove and discard discharge hose, retain all hardware.
5. Remove and discard suction hose, retain all hardware.
6. Remove compressor from the vehicle.

Caution: Hoses or block fittings on hose assemblies should be capped or protected from foreign matter entering the system.

7. Remove the compressor oil plug and then drain as much mineral oil as possible from the compressor body. Drain mineral oil from the cylinder head, suction and discharge ports while turning the shaft with a socket wrench on the clutch armature retaining nut.
8. Replace the compressor oil plug o-ring with a replacement o-ring, P/N SOA864A320. Reinstall compressor oil plug on the compressor and reinstall the compressor.
9. Install new discharge hose, P/N SOA864A300, using all applicable OE hardware. Lubricate the discharge hose o-rings before installation.

continues on pg. 16

Air Conditioning Retrofit Procedures

Note: 1990-94 Loyale systems require that an A/C discharge hose extension, P/N 73044GA321, be attached to the discharge hose to complete the assembly. This hose extension is a standard part in Loyale A/C systems manufactured before 1990, and is included in this kit.

10. Install new suction hose, P/N SOA864A310, using all applicable OE hardware. Lubricate the suction hose o-rings before installation.
11. Remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
12. Remove and discard the receiver/drier o-rings and replace with new o-rings, P/N SOA864A320.
13. Install the new receiver/drier, P/N SOA864A200.
14. Paint the receiver/drier sight glass with touch-up paint. The sight glass cannot be utilized in testing R-134a performance.
15. Add 150 cc of PAG oil lubricant, P/N SOA864A330 to the system as follows:
 - a. Follow charging station equipment manufacturer's procedures.
 - b. If there is no provision for lubricant addition, use the following procedure:
 - Prepare the vacuum pump to pull negative pressure at the low pressure adapter fitting.
 - Connect the end of the high pressure charge hose to the high pressure adapter fitting.
 - Place the other end into a graduated marked container that contains the specified type of PAG lubricant.
 - Pull a negative pressure (vacuum) on the low side of the A/C system, which will draw the lubricant into the high side.
 - Discontinue the negative pressure (vacuum) when 150 cc of PAG oil lubricant, P/N SOA864330 has been drawn into the system.
16. Evacuate the A/C system for 45 minutes using R-134a equipment.
 - a. After 10 minutes, close the manifold gauge valves and perform a vacuum leak test.
 - b. After five minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, pressurize the system and perform an electronic leak test of the system.
 - c. If no leak is indicated resume evacuation (remaining 35 minutes).
17. Charge the system with 21 oz. of R-134a refrigerant. Leak check the system using R-134a refrigerant equipment.
18. Remove the old R-12 A/C ID tag and discard.
19. Fill out the R-134a retrofit label, P/N SOA635054, by lifting white backing tape and writing in oil type 100 PAG, the oil amount 150 cc, and the R-134a charge amount 21 oz. Locate the label in a highly visible location such as the firewall or hood. Cover the label with the clear portion of label. Fill out the bottom portion of R-134a A/C ID tag and place next to the top portion.
20. Conduct a performance test. Reference the service manual for R-134a performance characteristics.



Retrofit Instructions For 1993 Impreza

Notes:

1. Retrofit kit is P/N G311FS010.
 2. Always lubricate all o-rings before installation.
 3. Always tighten fittings to proper torque specifications.
 4. Observe all safety recommendations.
 5. System to be serviced by qualified personnel only.
1. Repair any problems or leaks before beginning retrofit procedure.
 2. Disconnect negative battery cable.
 3. Recover all R-12 refrigerant from the vehicle's A/C system utilizing a UL approved R-12 recovery device.

continues on pg. 18

Air Conditioning Retrofit Procedures

4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
5. On the attachment block surface that contacts the receiver/drier, remove the guide pin and make sure that the block surface is flat after removal.
6. Use touch-up paint to paint the sight glass on replacement receiver/drier; P/N 73411FA100. The sight glass cannot be utilized in testing R-134a performance.
7. Remove and discard the receiver/drier o-rings and replace with new o-rings, P/N 73039AA010. Lubricate o-rings with the specified PAG oil lubricant.
8. Install the replacement receiver/drier, P/N 73411FA100, in the vehicle, torque to the proper specification, and connect the pressure switch electrical connection.
9. Install an adapter valve—low pressure, P/N 73058AA100, on the low pressure suction hose. Torque the adapter to proper specification per the torque chart in the service manual.
10. Install an high pressure adapter valve, P/N 73058AA110, on the high pressure discharge hose. Torque the adapter to proper specification per the torque chart in the service manual.
11. Add 180 cc of PAG oil lubricant, P/N K0010FS100 to the system as follows:
 - a. Follow charging station equipment manufacturer's procedures.
 - b. If there is no provision for lubricant addition, use the following procedure.
 - Prepare the vacuum pump to pull negative pressure at the low pressure adapter fitting.
 - Connect one end of the high pressure charge hose to the high pressure adapter fitting.
 - Place the other end into a graduated, marked container that contains the specified type of PAG lubricant.
 - Pull a negative pressure (vacuum) on the low side of the A/C system, which will draw the lubricant into the high side.
 - Discontinue the negative pressure (vacuum) when 180 cc of PAG oil lubricant, P/N K0010FS100 has been drawn into the system.
12. Evacuate the A/C system for a minimum of 30 minutes.
 - a. After 10 minutes close the manifold gauge valves and perform a vacuum leak test.
 - b. After five minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in. HG, pressurize and perform an electronic leak test of the system.
 - c. If no leak is indicated resume evacuation (remaining 20 minutes).
13. Charge system with 21 oz./0.6 kg. R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the cap is an important part of the service valve seal), and perform leak test.
14. Remove and discard the existing refrigerant R-12 system label from upper radiator core support.

Paint upper radiator core support if damaged during removal of label.
15. Fill out the retrofit label, P/N SOA635054, by lifting white backing tape and writing in oil type PAG 100, the oil amount 180 cc, and the R-134a charge amount 21 oz./0.6 kg. Locate the label in a highly visible location such as the firewall or hood. Pull the white backing off the label and cover the label with the clear portion of label.
16. Conduct a performance test. Reference the service manual for performance characteristics.

Retrofit Instructions For 1990-93 Legacy Zexel Systems

Notes:

1. Retrofit kit P/N for 1990-91 Legacy is G3110AS000, for 1992 Legacy is G3110AS010 and for 1993 Legacy is G3110AS020.
2. Always lubricate all o-rings with PAG oil before installation.
3. Always tighten fittings to proper torque specifications.
4. Observe all safety recommendations.
5. System to be serviced by qualified personnel only.

1. Repair any problems or leaks before beginning retrofit procedure.
2. Disconnect negative battery cable.
3. Recover all R-12 refrigerant from the vehicle's A/C system utilizing a UL approved R-12 recovery device.
4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
5. Use touch-up paint to paint the sight glass on replacement receiver/drier; P/N 73031AA210. The sight glass cannot be utilized in testing R-134a performance.
6. Remove and discard the receiver/drier o-rings and replace with new o-rings, P/N 73039AA200.
7. Install the replacement receiver/drier, P/N 73031AA210, in the vehicle and connect the pressure switch electrical connection.
8. Remove and discard the suction refrigerant hose, retain all hardware, and add 200 cc PAG retrofit 100 oil, P/N 73019AA110, to the compressor.
9. Install new suction hose, P/N 73054AA620 (73054AA400 for '93 Model), using all applicable OE hardware. Lubricate the suction hose o-rings before installation.
10. Remove the discharge refrigerant hose and retain all hardware.
11. Install new discharge hose, P/N 73054AA600 (73054AA630 for '92 Model and 73054AA640 for '93 Model), using all applicable OE hardware. Lubricate the discharge hose o-rings before installation.
12. Evacuate the A/C system for 30 minutes using R-134a equipment.
 - a. After 10 minutes close the manifold gauge valves and perform a vacuum leak test.
 - b. After five minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, pressurize and perform an electronic leak test of the system.
 - c. If no leak is indicated resume evacuation (remaining 20 minutes).
13. Charge system with 1.87 lb./30 oz./850 gm. R-134a refrigerant and

Air Conditioning Retrofit Procedures

operate the system for 10 minutes at idle. Install the R-134a service caps (the caps are an important part of the service valve seal), and perform a leak test.

14. Remove and discard the existing refrigerant R-12 system label from upper radiator core support.

Paint upper radiator core support if damaged during removal of label.

15. Fill out the R-134a retrofit label, P/N SOA635054, by lifting white backing tape and writing in oil type PAG 100, the oil amount 200 cc, and the R-134a charge amount 1.87 lb/30 oz/850 gm.

Locate the label in a highly visible location such as the firewall or hood. Pull the backing off the label and cover the label with the clear portion of the label.

16. Conduct a performance test. Reference the service manual for R-134a performance characteristics.

Retrofit Instructions For '90-91 Legacy Calsonic Systems (Including Turbo)

Notes:

1. Retrofit kit for 1990-91 Legacy non-turbo models is P/N G3110AS100; for 1991 Legacy turbo models it is P/N G3110AS110.
2. Always lubricate all o-rings with PAG oil before installation.
3. Always tighten fittings to proper torque specifications.
4. Observe all safety recommendations.
5. System to be serviced by qualified personnel.

1. Repair any problems or leaks before beginning retrofit procedure.
2. Disconnect negative battery cable.
3. Recover all R-12 refrigerant from the vehicle's A/C system utilizing a UL approved R-12 recovery device.
4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
5. On the attachment block surface that contacts the receiver/drier, remove the guide pin and make sure the block surface is flat after removal.
6. Use touch-up paint to paint the sight glass on replacement receiver/drier; P/N 73411FA100. The sight glass cannot be utilized in testing R-134a performance.
7. Remove and discard the receiver/drier o-rings and replace with new o-rings, P/N 73039AA010. Lubricate o-rings with the specified PAG oil lubricant.
8. Install the replacement receiver/drier, P/N 73411FA100, to the vehicle, torque to the proper specification, and connect the pressure switch electrical connection.
9. Remove the compressor from the vehicle.

Caution: Hoses or block fittings on hose assemblies should be capped or protected from foreign matter entering the system.

10. Remove and discard the compressor pressure relief valve and then drain as much mineral oil as possible from the compressor body. Drain mineral oil from the cylinder head, suction and discharge ports while turning the shaft with a socket wrench on the clutch armature nut.

11. Install the replacement compressor relief valve, P/N 73035AA100.

Lubricate o-rings with the specified PAG oil lubricant and reinstall the compressor.

12. Remove and discard the suction refrigerant hose, retain all hardware, and add 236 cc of PAG oil lubricant, P/N 73019AA100, to the compressor.
13. Install new suction hose, P/N 73054AA141 (73054AA311 for Turbo), using all applicable OE hardware. Lubricate the suction hose o-rings before installation.
14. Install an adapter valve -suction hose, P/N 73058AA100 to the low pressure suction hose. Torque the adapter to proper specification.
15. Remove the discharge refrigerant hose and retain all hardware.
16. Install new discharge hose, P/N 73054AA081,



continues on pg. 22

Air Conditioning Retrofit Procedures

using all applicable OE hardware. Lubricate the discharge hose o-rings before installation.

17. Install an adapter valve discharge hose, P/N 73058AA110 on the high pressure discharge hose. Torque the adapter to proper specification.

18. Evacuate the A/C system for a minimum of 30 minutes.

- After 10 minutes close the manifold gauge valves and perform a vacuum leak test.
- After five minutes, re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, perform an electronic leak test of the system.
- If no leak is indicated resume evacuation (remaining 20 minutes).

19. Charge system with 23 oz./0. 65 kg. R-134a refrigerant and operate the system for 10 minutes at idle.

Install the R-134a service caps (the cap is an important part of the service valve seal), and perform leak test.

20. Remove and discard the existing refrigerant R-12 system label from upper radiator core support.

Paint upper radiator core support if damaged during removal of label.

21. Fill out the retrofit label, P/N SOA635054, by lifting white backing tape and writing in oil type PAG 100, the oil amount 236 cc, and the R-134a charge amount 23 oz./0. 65 kg. Locate the label in a highly visible location such as the firewall or hood.

22. Conduct a performance test. Reference the service manual for R-134a performance characteristics.

Retrofit Instructions For '92-93 Legacy Calsonic Systems (Including Turbo)

Notes:

1. Retrofit kit is P/N G3110AS120.
2. Always lubricate all o-rings with PAG oil before installation.
3. Always tighten fittings to proper torque specifications.
4. Observe all safety recommendations.
5. System to be serviced by qualified personnel only.

1. Repair any problems or leaks before beginning retrofit procedure.

2. Disconnect negative battery cable.

3. Recover all R-12 refrigerant from the vehicle's A/C system utilizing a UL approved R-12 recovery device.

4. Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.

5. On the attachment block surface that contacts the receiver/drier, remove the guide pin and make sure the block surface is flat after removal; reference the torque chart in the service manual.

6. Use touch-up paint to paint the sight glass on replacement receiver/drier, P/N 73411FA100. The sight glass cannot be utilized in testing R-134a performance.

7. Remove and discard the receiver/drier o-rings and replace with new o-rings, P/N 73039AA010. Lubricate o-rings with the specified PAG oil lubricant.

8. Install the replacement receiver/drier, P/N 73411FA100, in the vehicle, torque to the proper specification, and connect the pressure switch electrical connection.

9. Remove the compressor from the vehicle.

Caution: Hoses or block fittings on hose assemblies should be capped or protected from foreign matter entering the system.

10. Remove and discard the compressor pressure relief valve and then drain as much mineral oil as possible from the compressor body. Drain mineral oil from the cylinder head, suction and



discharge ports while turning the shaft with a socket wrench on the clutch armature retaining nut.

11. Install the replacement compressor relief valve, P/N 73035AA100. Lubricate o-rings with the specified PAG oil lubricant and reinstall the compressor.

12. Install a low pressure adapter valve, P/N 73058AA100 on the low pressure suction hose. Torque the adapter to proper specification.

13. Install a high pressure adapter valve, P/N 73058AA110 on the high pressure discharge hose. Torque the adapter to proper specification.

14. Add 236 cc of PAG oil lubricant, P/N 73019AA100 to the system as follows:

a Follow charging system equipment manufacturer's procedures.

b. If there is no provision for lubricant addition, use the following procedure.

- Prepare the vacuum pump to pull negative pressure at the low pressure adapter fitting.
- Connect one end of the high pressure charge hose to the high pressure adapter fitting.
- Place the other end into a graduated, marked container that contains the specified type of PAG lubricant.
- Pull a negative pressure (vacuum) on the low side of the A/C system, which will draw the lubricant into the high side.
- Discontinue the negative pressure (vacuum) when 236 cc of PAG oil lubricant, P/N 73019AA100 has been drawn into the system.

15. Evacuate the A/C system for a minimum of 30 minutes.

a After 10 minutes close the manifold gauge valves and perform a vacuum leak test.

b. After five minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, perform an electronic leak test of the system.

Air Conditioning Retrofit Procedures

- c. If no leak is indicated resume evacuation (remaining 20 minutes).
- 16.** Charge system with 23 oz./0.65 kg. R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the cap is an important part of the service valve seal), and perform leak test.
- 17.** Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.
- 18.** Fill out the retrofit label, P/N SOA635054, by lifting white backing tape and writing in oil type PAG 100, the oil amount 236 cc, and the R-134a charge amount 23 oz./0.65 kg. Locate the label in a highly visible location such as the firewall or hood.
- 19.** Conduct a performance test. Reference the service manual for R-134a performance characteristics.

Retrofit Instructions For '92 SVX

Notes:

- 1. Retrofit kit is P/N G3110PS000.*
 - 2. Always lubricate all o-rings with PAG oil before installation.*
 - 3. Always tighten fittings to proper torque specifications.*
 - 4. Observe all safety recommendations.*
 - 5. System to be serviced by qualified personnel only.*
- 1.** Repair any problems or leaks before beginning retrofit procedure.
 - 2.** Disconnect negative battery cable.
 - 3.** Recover all R-12 refrigerant from the vehicle's A/C system utilizing a UL approved R-12 recovery device.
 - 4.** Disconnect the electrical connection from receiver/drier pressure switch and remove the existing R-12 receiver/drier from the vehicle and discard. Allow as much oil as possible to drain from A/C hoses or pipes.
 - 5.** Use touch-up paint to paint the sight glass on replacement receiver/drier; P/N 73031PA100. The sight glass cannot be utilized in testing R-134a performance.
 - 6.** Remove and discard the receiver/drier o-rings and replace with new o-rings, P/N 73039AA200.
 - 7.** Install the replacement receiver/drier, P/N 73031PA100, in the vehicle and connect the pressure switch electrical connection.
 - 8.** Remove and discard the suction refrigerant hose, retain all hardware, and add 200 cc PAG retrofit 100 oil, P/N 73019AA110, to the compressor.
 - 9.** Install new suction hose, P/N 73050PA200, using all applicable OE hardware. Lubricate the suction hose o-rings before installation.
 - 10.** Remove the discharge refrigerant hose and retain all hardware.
 - 11.** Install new discharge hose, P/N 73050PA060, using all applicable OE hardware. Lubricate the discharge hose o-rings before installation.
 - 12.** Evacuate the A/C system for 30 minutes using R-134a equipment.
 - a.** After 10 minutes close the manifold gauge valves and perform a vacuum leak test.
 - b.** After five minutes re-check the low pressure gauge reading. If the vacuum level has changed more than 1 in HG, perform an electronic leak test of the system.
 - c.** If no leak is indicated resume evacuation (remaining 20 minutes).
 - 13.** Charge system with 1.87 lb./30 oz./850 gm. R-134a refrigerant and operate the system for 10 minutes at idle. Install the R-134a service caps (the caps are an important part of the service valve seal), and perform a leak test.
 - 14.** Remove and discard the existing refrigerant R-12 system label from upper radiator core support. Paint upper radiator core support if damaged during removal of label.
 - 15.** Fill out the R-134a retrofit label, P/N SOA635054, by writing in oil type PAG 100, the oil amount 200 cc, and the R-134a charge amount 1.87 lb./30 oz./850 gm. Locate the label in a highly visible location. Pull the backing off the label and cover the label with the clear portion of the label.
 - 16.** Conduct a performance test. Reference the service manual for R-134a performance characteristics.